

FACT SHEET  
REISSUANCE OF A GENERAL VPDES PERMIT  
TO DISCHARGE TO STATE WATERS AND STATE  
CERTIFICATION UNDER THE STATE WATER CONTROL LAW

The Virginia State Water Control Board has under consideration the reissuance of a VPDES general permit for point source discharges from facilities discharging potable water treatment plant wastewater (SIC Code 4941-Water Supply, or other discharges of potable water treatment plant wastewater as approved by the Board) to the surface waters of the Commonwealth of Virginia. This permit is a VPDES general permit covered under the National Pollutant Discharge Elimination System. Owners who wish to discharge under a general permit must register for coverage under the reissued general permit.

Permit Number: VAG64

Name of Permittee: Any owner of a qualifying potable water treatment plant with point source discharges to the surface waters of the Commonwealth of Virginia.

Facility Location: Commonwealth of Virginia

Receiving Waters: Surface waters within the boundaries of the Commonwealth of Virginia, except those specifically named in Board regulations which prohibit such discharges.

On the basis of preliminary review and application of lawful standards and regulations, the State Water Control Board proposes to reissue the general VPDES permit subject to certain conditions. The Board has determined that this category of discharges is appropriately controlled under a general permit. The category of discharges to be included involves facilities with the same or similar types of operations and the facilities discharge the same or similar types of wastes. The draft general permit requires that all covered facilities meet standardized effluent limitations and monitoring requirements.

All pertinent information is on file and may be inspected, and arrangements made for copying by contacting Elleanore Daub at:

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Activities Covered By This General Permit:

This general permit will cover point source discharges of potable water treatment plant wastewater (SIC Code 4941 – Water Supply, or other discharges of potable water treatment plant wastewater as approved by the Board) to surface waters of the Commonwealth of Virginia. The types of water treatment plants to be covered include treatment processes such as pretreatment (coagulation/flocculation/sedimentation); conventional filtration; softening with lime/soda ash, ion exchange, or membrane; and membrane filtration and desalting. Wastewater may be generated from clarifier underflow, sludge blowdown and particulate filter backwash from plain purification and lime-soda softening process, iron filter backwash wastewater from iron and manganese removal processes, reverse osmosis and micro filtration processes.

Ground water is most frequently treated to remove dissolved iron and manganese and typically includes oxidation (i.e., ozonation, chlorination, or addition of potassium permanganate) to precipitate the iron and manganese followed by filtration to remove the iron and manganese oxides.

Surface water is most frequently treated by filtration to remove suspended solids and may incorporate presedimentation and sedimentation basins before filtration. Precipitation, coagulation, and flocculation are frequently used to increase the effectiveness of sedimentation and filtration. Aluminum sulfate (alum) is the most common additive and is used for coagulation. Polymers are another common additive that may be used to enhance coagulation, flocculation, or filtration. Chlorination may be used before filtration as an oxidizing agent for precipitation and to remove taste and odor. Chlorine is often added after filtration for disinfection purposes, producing finished water for distribution to customers.

These wastewater treatment systems produce an acceptable quality effluent and operate well when maintained properly.

#### Authorization to Discharge

This general permit will have a term of four years, six months and six days. The maximum term for permits are normally five years. The expiration date of this permit is changed from December 23, 2018 to June 30, 2018 to move it away from the end of the year to address DEQ staff resource issues and to have the permit effective date begin on a calendar quarter which is consistent with other general permits. Every authorization under this general permit will expire at the same time and all authorizations will be renewed on the same date, provided a complete registration statement has been filed prior to the general permit's expiration date.

Any person conducting an activity covered by an individual permit, which could be covered by this general permit, may request that the individual permit be revoked and register for coverage under this general permit. An alternative to this is to wait until the individual permit expires and then ask for coverage at a later date. There are reasons why authorization to discharge cannot be granted. These are described below and should be considered by owners before submitting a registration statement.

A facility is ineligible for coverage under this general permit if DEQ becomes aware of any data indicating the potential for adverse water quality impacts.

Antibacksliding will be considered prior to granting coverage under this general permit. Generally, this means that any effluent limitations or requirements in your individual permit that are more restrictive than those in the general permit cannot be relaxed or removed. If granting coverage under the general permit would result in possible backsliding of effluent limitations or permit requirements, then coverage will not be allowed and you must retain your individual permit.

Antidegradation will be considered prior to granting coverage under this general permit. This means that a determination will be made in accordance with the State Water Control Board's Antidegradation Policy contained in the Virginia Water Quality Standards, 9VAC25-260-30. Generally, the standards require that high quality waters must be maintained and new or increased discharges to exceptional waters (specifically listed in 9VAC25-260-30) are not allowed.

The discharge must also be consistent with the assumptions and requirements of an approved total maximum daily load (TMDL), if applicable. As of this date, most potable water treatment plants are considered insignificant loads in TMDLs, or the limits set forth in the general permit meet the requirements of the TMDL.

Facilities that are subject to the requirements of 9 VAC 25-820-70, Part I.G.1 (*General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia - Requirement to Register*), will usually also have an individual permit to address tracking of waste load offsets or technology-based annual concentration limits. These facilities are excluded from coverage under this general permit, since the discharge of potable water treatment plant wastewater will be included as part of the individual permit.

Any discharge that has the reasonable potential to cause toxicity instream will not be granted coverage under the general permit. Note that Whole Effluent Toxicity (WET) testing is no longer a pre-requisite

for coverage under the general permit, but data (from current or previous permit terms) must be submitted with the registration statement if it is available, and must be representative of the current facility discharge. Note that WET testing will now be a special condition required during the permit term if WET testing has never been conducted or is no longer representative of the discharge. See special conditions below.

### Registration

All facilities that the Department believes are eligible for coverage under this general permit will be authorized to discharge under the terms and conditions of the permit after a complete registration statement is submitted, the applicable permit fee is paid and the Department sends a copy of the general permit to the applicant. If this general permit is inappropriate, the applicant will be so notified and the requirement that an individual permit or alternate general permit is needed will remain in effect.

The registration statement contains instructions for filling out the form and the type of data needed.

Owners of new potable water treatment plants must submit the registration statement at least 60 days prior to commencing discharge. Owners of existing facilities covered under the previous general permit must submit a registration statement by October 24, 2013 to reregister for coverage under this permit. Existing owners covered by individual VPDES permits must submit a complete registration statement 270 days prior to the expiration of the individual VPDES permit. The 270 day deadline allows DEQ time to review the registration and respond to the owner in time for the owner to submit an individual permit application if their general permit registration is not accepted. Late registrations will be accepted but permit coverage will not be retroactive for the period between when the application was due and when it was submitted.

### General Permit

There are two permit limits pages. The first limits page covers 'conventional' water treatment plants (anything that is not a reverse osmosis or nanofiltration plant). The second limits page covers reverse osmosis and nanofiltration plants.

### Proposed Limitations and Monitoring Requirements:

A. Effluent limitations for potable water treatment plant wastewater that are not reverse osmosis or nanofiltration plants are as follows:

<u>Parameter</u>	<u>Limitation</u>	<u>Monitoring</u>
Flow	Monitoring	Estimate
pH	9.0 max., 6.0 min. <sup>1</sup>	Grab
Total Suspended Solids	30 mg/l avg., 60 mg/l max.	Composite <sup>2</sup>
Total Residual Chlorine <sup>3</sup>	0.011 mg/L avg. and 0.011 mg/l max.	Grab

B. Effluent limitations for reverse osmosis and nanofiltration potable water treatment plant wastewater facilities are as follows:

<u>Parameter</u>	<u>Limitation</u>	<u>Monitoring<sup>1</sup></u>
Flow	Monitoring	Estimate
pH <sup>2</sup>	9.0 max., 6.0 min.	Grab
Dissolved Oxygen <sup>2</sup>	4.0 mg/l min.	Grab
Total Dissolved Solids	NL mg/l max	Composite <sup>3</sup>
Total Residual Chlorine <sup>4</sup>	0.011 mg/l mo avg & max	Grab

NL is defined as no limitation, monitoring and reporting are required.

- <sup>1</sup> Monitoring frequency shall be once per quarter for conventional plants and once per month for reverse osmosis and nanofiltration plants. Monitoring frequency for reverse osmosis and nanofiltration plants can be reduced to once per quarter upon written notification from the DEQ Regional Office. Reports of quarterly monitoring shall be submitted to the DEQ Regional Office no later than the 10<sup>th</sup> day of April, July, October and January.
- <sup>2</sup> Where the Water Quality Standards (9VAC25-260) establish alternate standards for pH in waters receiving the discharge, those standards shall be the maximum and minimum effluent limitations (minimum only for dissolved oxygen).
- <sup>3</sup> Composite - For continuous discharges, five grab samples collected at hourly intervals. For batch discharges, five grab samples taken at evenly placed intervals until the discharge ceases, or until a minimum of five grab samples have been collected. For continuous or batch discharges, the first grab shall occur within 15 minutes of commencement of the discharge.
- <sup>4</sup> Total Residual Chlorine limit shall only be applicable to facilities that use chlorine in the treatment process.

#### Basis for Proposed Effluent Limitations and Monitoring Requirements

In developing the proposed effluent limitations and special conditions the following information was reviewed. DEQ's permit manual currently contains standard effluent limits and special permit conditions to be used for water treatment plant individual permits, and several other states issue general permits for discharges from potable water treatment plant wastewater facilities. As no federal effluent limitation guidelines currently exist for discharges from water treatments plants, the monitoring requirements and limitations in this permit are based on best professional judgment and the water quality standards in 9VAC25-260.

As determined by the nature of the business, the parameters to be limited or monitored in this general VPDES permit for potable water treatment plant discharges are pH, total residual chlorine and total suspended solids. The parameters for reverse osmosis discharges are pH, dissolved oxygen, and total dissolved solids. The pH limitation is based upon Virginia's stream water quality standards (9 VAC 25-260-50 and 9 VAC 25-260-380). The total suspended solids, and total dissolved solids parameters are based on best professional judgment (9 VAC 25-31-210) and are established at levels which, based on the Department's experience with individual VPDES permits, are achievable with conventional treatment technology and which will prevent the build-up of solids on the bottom of receiving waters. The dissolved oxygen and total residual chlorine parameter are based on water quality standards for the type of treatment employed by these systems. Complying with these limitations is an indication that the treatment system is being operated and maintained properly and is producing an acceptable quality effluent.

Water treatment plants applying for coverage under this permit may use either ground water or surface water as their source water, and processes can vary depending on the treatment the source water requires.

#### Proposed Special Conditions and Rationale

1. Inspection of the effluent, and maintenance of the wastewater treatment facility shall be performed daily when discharging. Documentation of the inspection and maintenance shall be recorded in an Operational Log. This operational log shall be made available for review by the Department personnel upon request.

9VAC25-31-10, and 40 CFR 122.41(e) require proper operation and maintenance of the permitted facility.

2. No domestic sewage discharges are permitted under this general permit.

The effluent limitations do not address pollutants typical of treated sewage, therefore no sewage discharges to surface or ground waters are permitted under the general permit.

3. No chemicals other than those listed on the owner's accepted registration statement are allowed. Prior approval shall be obtained from the Board before any changes are made to the chemical(s), in order to assure protection of water quality and beneficial uses of the waters receiving the discharge.
4. There shall be no discharge of floating solids or visible foam in other than trace amounts.

This condition is required to implement the Water Quality Standards (9VAC25-260-20). Restriction of solids deposition in surface water in the vicinity of the outfall as a result of the industrial activity is also a standard special condition found in all VPDES permits. It serves as a measure of protection that the treatment works are operating correctly.

5. Owners of facilities that are a source of the specified pollutant of concern to waters where an approved TMDL has been established shall implement measures and controls that are consistent with the assumptions and requirements of the TMDL.

EPA does not want DEQ to authorize general permits that are not in conformance with any applicable TMDL. This was a requirement also added to the regulation in section 50 'Authorization to Discharge.' Staff thought it important to repeat this as a special condition in the permit itself.. It reinforces the way general permits are currently handled in TMDLs. The assumption of the TMDL is that general permits are insignificant to the total load until such time that the TMDL program determines that the load is significant and the TMDL needs to be modified to include the load.

6. The permittee shall notify the Department as soon as they know or have reason to believe:

- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:

- (1) 100 micrograms per liter µg/l;
- (2) Two hundred micrograms per liter for acrolein and acrylonitrile; five hundred micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter for antimony;
- (3) Five times the maximum concentration value reported for that pollutant in the permit application; or
- (4) The level established by the Board.

- b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:

- (1) Five hundred micrograms per liter;
- (2) One milligram per liter for antimony;
- (3) Ten times the maximum concentration value reported for that pollutant in the permit application; or

(4) The level established by the Board.

Required by VPDES Permit Regulation, 9VAC25-31-200 A for all manufacturing, commercial, mining and silvicultural dischargers.

7. If a Board approved groundwater monitoring plan was submitted with the registration statement, the permittee shall continue to sample and report in accordance with the plan. The approved plan shall be an enforceable part of this permit. The Board or the owner, with Board approval, may evaluate the groundwater monitoring data and demonstrate that revisions to, or the cessation of the groundwater monitoring are appropriate.

The purpose of the ground water monitoring plan is to determine if the system integrity is being maintained and to indicate if activities at the site are resulting in violations of the Board's Ground Water Standards (9 VAC 25-280).

8. Compliance reporting under Part I A

- a. The quantification levels (QL) shall be as follows:

<u>Effluent Characteristic</u>	<u>Quantification Level</u>
Chlorine	0.10 mg/l
TSS	1.0 mg/l

- b. Reporting

Monthly Average -- Compliance with the monthly average limitations and/or reporting requirements for the parameters listed in a. above shall be determined as follows: All concentration data below the QL listed above shall be treated as zero. All concentration data equal to or above the QL listed in a. above shall be treated as it is reported. An arithmetic average shall be calculated using all reported data for the month, including the defined zeros. This arithmetic average shall be reported on the Discharge Monitoring Report (DMR) as "calculated". If all data are below the QL, then the average shall be reported as "<QL". If reporting for quantity is required on the DMR and the calculated concentration is <QL, then report "<QL" for the quantity. Otherwise use the calculated concentration.

Daily Maximum -- Compliance with the daily maximum limitations and/or reporting requirements for the parameters listed in a., above shall be determined as follows: All concentration data below the QL listed in a. above shall be treated as zero. All concentration data equal to or above the QL shall be treated as reported. An arithmetic average shall be calculated using all reported data, including the defined zeros, collected within each day during the reporting month. The maximum value of these daily averages thus determined shall be reported on the DMR as the Daily Maximum. If all data are below the QL, then the average shall be reported as "<QL". If reporting for quantity is required on the DMR and the calculated concentration is <QL, then report "<QL" for the quantity. Otherwise use the calculated concentration.

- c. Any single datum required shall be reported as "<QL" if it is less than the QL in a. above. Otherwise the numerical value shall be reported.
- d. The permittee shall report at least the same number of significant digits as the permit limit for a given parameter. Regardless of the rounding convention used (i.e., 5 always rounding up or to the nearest even number) by the permittee, the permittee shall use the convention consistently, and shall ensure that consulting laboratories employed by the permittee use the same convention.

Authorized by VPDES Permit Regulation, 9VAC25-31-190 J 4 and 220 I. This condition is necessary when toxic pollutants are monitored by the permittee and a maximum level of quantification and /or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.

9. Operation and Maintenance Manual Requirement. Within 90 days after the date of coverage under this general permit, the permittee shall develop an Operations and Maintenance (O&M) Manual for the treatment works. The manual shall be reviewed within 90 days of changes to the treatment system. The manual shall be certified in accordance with Part II K of this permit. The manual shall be made available for review by Department personnel upon request. This manual shall detail the practices and procedures which will be followed to ensure compliance with the requirements of this permit. Within 30 days of a request by DEQ, the current O&M Manual shall be submitted to the DEQ Regional Office for review and Board approval. The permittee shall operate the treatment works in accordance with the approved O&M Manual. Noncompliance with the O&M Manual shall be deemed a violation of the permit. This manual shall include, but not necessarily be limited to, the following items, as appropriate:
  - a. Techniques to be employed in the collection, preservation, and analysis of effluent samples;
  - b. Discussion of Best Management Practices, if applicable;
  - c. Treatment system design, treatment system operation, routine preventive maintenance of units within the treatment system, critical spare parts inventory and record keeping;
  - d. A plan for the management and/or disposal of waste solids and residues which includes a requirement to clean settling basins and lagoons (if present at the facility) in order to achieve effective treatment, and a requirement that all solids shall be handled, stored and disposed of so as to prevent a discharge to state waters; and
  - e. Procedures for measuring and recording the duration and volume of treated wastewater discharged.

Required by Code of Virginia § 62.1-44.16; VPDES Permit Regulation, 9VAC25-31-190 E, and 40 CFR 122.41(e). These require proper operation and maintenance of the permitted facility. Compliance with an approval O&M manual ensures this.

10. Owners with a daily maximum flow rate greater than or equal to 50,000 gallons per day (GPD) that have not conducted whole effluent toxicity (WET) testing to demonstrate there is no reasonable potential for toxicity from their discharge shall conduct WET testing as described below. Daily maximum flow will be determined from the maximum flow submitted on the DMRs over the last permit coverage term. Owners with changes in treatment technology or chemical usage that change the characteristics of the discharge and with a daily maximum flow rate greater than or equal to 50,000 GPD shall conduct WET testing as described below. An example of a significant change is changing polymers in the flocculation process, adding chlorine, and upgrading the plant. An insignificant change would be switching fluoride suppliers. Any questions about significant changes will be dealt with at the time of registration. This is also when the owner will be told whether or not WET testing is required during the next permit term.
  - a. The WET testing shall consist of a minimum of four sets (set = vertebrate and invertebrate) of acute or chronic tests that reflect the current characteristics of the treatment plant effluent using the following tests and organisms:

For an intermittent or batch dischargers, these are hourly grab samples for the duration of the	48 hour static acute toxicity tests
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discharge. The first grab should be within 15 minutes of commencement of the discharge.	
Freshwater organisms	<i>Pimephales promelas</i> or <i>Oncorhynchus mykiss</i> (for cold water) (vertebrates) <i>Ceriodaphnia dubia</i> (invertebrate)
Saltwater organisms	<i>Cyprinodon variegatus</i> (vertebrate) <i>Americamysis bahia</i> (invertebrate)
For continuous dischargers, generally, this is a minimum of 5 consecutive day discharges. Samples should be 24 hour flow proportional composites.	
Freshwater	7-Day Chronic Static Renewal Larval Survival and Growth Test with <i>Pimephales promelas</i> (vertebrate) 3-Brood Chronic Static Renewal Survival and Reproduction Test with <i>Ceriodaphnia dubia</i> (invertebrate)
Saltwater	7-Day Chronic Static Renewal Larval Survival and Growth Test with <i>Cyprinodon variegatus</i> (vertebrate) 7-Day Chronic Static Renewal Survival, Growth and Fecundity Test with <i>Americamysis bahia</i> (invertebrate)

Freshwater organisms are used where the salinity of the receiving water is less than 1.0‰ (parts per thousand). Where the salinity of the receiving water is greater than or equal to 1.0‰ but less than 5.0‰ either freshwater or saltwater organisms may be used. Saltwater organisms are used where the salinity is greater than or equal to 5.0‰. There shall be a minimum of 30 days between sets of tests, and test procedures shall follow Title 40 of the Code of Federal Regulations (CFR) Part 136, which references the EPA guidance manuals for WET testing.

- b. This testing shall be completed, at a minimum, during the first year of coverage under the general permit or within one year of commencing discharge. If discharge commences late in the five year coverage term, the owner should ensure the next registration statement is submitted on time and, with that submittal, consider asking for an administrative continuance of the 2013 permit coverage in order to complete the WET testing.
- c. The Department will evaluate all representative data statistically to see if there is reasonable potential for toxicity in the facility discharge. If such reasonable potential exists and cannot be eliminated, the owner will be notified that they must apply for an individual VPDES permit at next reissuance and a WET limit will be included in that individual permit. If the potential cause of the toxicity is eliminated during the five year term of this general permit, the owner may conduct additional WET testing to demonstrate that there is no longer reasonable potential for toxicity and an individual permit will not be required at the next reissuance. It will benefit the owner to find and eliminate the cause of toxicity so that you may retain coverage under the general permit.



- d. If the Department determines that no reasonable potential for toxicity exists in the facility discharge, no further WET testing is required unless changes in treatment technology or chemical usage are made at the plant that change the characteristics of the discharge. If there have been changes to the effluent characteristics, then four sets of WET testing, either acute or chronic tests as applicable, must be performed to re-characterize the discharge.
- e. The completed series of WET testing data must be submitted with the next required discharge monitoring report.

Required by VPDES Permit Regulation, 9VAC25-31-210 and 220 I. Requires monitoring in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act.

- 11. The discharges authorized by this permit shall be controlled as necessary to meet applicable water quality standards.

This matches similar language going into other general permits and have been a general narrative condition requested by EPA.

- 12. Notice of termination.

- a. The owner may terminate coverage under this general permit by filing a complete notice of termination with the department. The notice of termination may be filed after one or more of the following conditions have been met:

- (1) Operations have ceased at the facility and there are no longer discharges of process wastewater from the potable water treatment plant;
- (2) A new owner has assumed responsibility for the facility. A notice of termination does not have to be submitted if a VPDES Change of Ownership Agreement form has been submitted;
- (3) All discharges associated with this facility have been covered by an individual VPDES permit or a VPDES general permit; or
- (4) Termination of coverage is being requested for another reason, provided the board agrees that coverage under this general permit is no longer needed.

- b. The notice of termination shall contain the following information:

- (1) Owner's name, mailing address, telephone number, and email address (if available);
- (2) Facility name and location;
- (3) VPDES general permit registration number for the facility; and
- (4) The basis for submitting the notice of termination, including:
  - (a) A statement indicating that a new owner has assumed responsibility for the facility;
  - (b) A statement indicating that operations have ceased at the facility and there are no longer discharges from the facility;
  - (c) A statement indicating that all discharges have been covered by an individual VPDES permit; or
  - (d) A statement indicating that termination of coverage is being requested for another reason (state the reason).

- c. The following certification: "I certify under penalty of law that all wastewater discharges from the identified facility that are authorized by this VPDES general permit have been

eliminated, or covered under a VPDES individual or a VPDES general permit, or that I am no longer the owner of the facility, or permit coverage should be terminated for another reason listed above. I understand that by submitting this notice of termination, that I am no longer authorized to discharge wastewater in accordance with the general permit, and that discharging pollutants to surface waters is unlawful where the discharge is not authorized by a VPDES permit. I also understand that the submittal of this notice of termination does not release an owner from liability for any violations of this permit or the Clean Water Act."

- d. The notice of termination shall be submitted to the department and signed in accordance with Part II K.
- 13. Approval for coverage under this general permit does not relieve any owner of the responsibility to comply with any other federal, state, or local statute, ordinance, or regulation.

This requirement is part of the regulation at section 50 C and is repeated in the permit to remind the permittee of the responsibility.

### Part III Conditions Applicable to All Permits

This section contains language from the permit regulation at 9VAC25-31-190 for conditions applicable to all permits. In 2013 a new condition was added to recognize the new Virginia Accredited Laboratory Program requirements in Part III A.

Also in 2013, the duty to reapply in Part III M is changed to 60 days before expiration to match the registration statement requirements in 9VAC25-860-60.

Also in 2013, the transfer of permits Part III Y has eliminated the allowance for transfer of permit requirements through modifications or revocation and reissuances because general permits are not modified or revoked and reissued. General permits may only be automatically transferred; however, the 30 days in advance notice of the transfer of ownership was often not feasible. Language was added so that the board can change the deadline depending on the situation.